

: R

```
1 0001 0 MODULE find ( IDENT = 'V04-000'  
2 0002 0 %BLISS32%, ADDRESSING_MODE (EXTERNAL = LONG_RELATIVE,  
3 0003 0 NONEXTERNAL = LONG_RELATIVE)  
4 0004 0 ) =  
5 0005 1 BEGIN  
6 0006 1 !*****  
7 0007 1 !*****  
8 0008 1 !*  
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26 0026 1 !*  
27 0027 1 !*  
28 0028 1 !*****  
29 0029 1 !*  
30 0030 1 ++  
31 0031 1 !* FACILITY: DSR (Digital Standard RUNOFF) / DSRPLUS  
32 0032 1 !* ABSTRACT: Uses a binary search to look up a keyword.  
33 0033 1 !* ENVIRONMENT: Transportable  
34 0034 1 !*  
35 0035 1 !* AUTHOR: R.W.Friday CREATION DATE: May, 1978  
36 0036 1 !*  
37 0037 1 !*  
38 0038 1 !*  
39 0039 1 !*
```

Revision History

D 6
16-Sep-1984 00:28:19
14-Sep-1984 13:06:16
VAX-11 Bliss-32 V4.0-742
DISK\$VMSMASTER:[RUNOFF.SRC]FIND.BLI;1 Page 2
**F

41 0040 1 XSBTTL 'Revision History'
42 0041 1
43 0042 1 MODIFIED BY:
44 0043 1
45 0044 1 002 RER00002 Ron Randall 07-Mar-1983
46 0045 1 Global edit of all modules. Updated module names, idents,
47 0046 1 copyright dates. Changed require files to BLISS library.
48 0047 1
49 0048 1 --
50 0049 1

```
: 52 0050 1 %SBTTL 'Module Level Declarations'  
: 53 0051 1  
: 54 0052 1  
: 55 0053 1 ! TABLE OF CONTENTS:  
: 56 0054 1  
: 57 0055 1 ! INCLUDE FILES:  
: 58 0056 1  
: 59 0057 1 LIBRARY 'NXPORT:XPORT'; ! XPORT Library  
: 60 0058 1 REQUIRE 'REQ:RNODEF'; ! RUNOFF variant definitions  
: 61 0189 1  
: 62 U 0190 1 %IF DSRPLUS %THEN  
: 63 U 0191 1 LIBRARY 'REQ:DPLLIB'; ! DSRPLUS BLISS Library  
: 64 0192 1 %ELSE  
: 65 0193 1 LIBRARY 'REQ:DSRLIB'; ! DSR BLISS Library  
: 66 0194 1 %FI  
: 67 0195 1  
: 68 0196 1 !  
: 69 0197 1 ! EXTERNAL REFERENCES:  
: 70 0198 1  
: 71 0199 1 EXTERNAL ROUTINE  
: 72 0200 1 TPROBE;  
: 73 0201 1
```

```
75 0202 1 GLOBAL ROUTINE FIND (KEY, SIZE, LIST) =  
76 0203 1  
77 0204 1 ++  
78 0205 1 | FUNCTIONAL DESCRIPTION:  
79 0206 1 |  
80 0207 1 | Searches LIST in an attempt to recognize KEY.  
81 0208 1 | A binary search algorithm is used.  
82 0209 1 |  
83 0210 1 | FORMAL PARAMETERS:  
84 0211 1 |  
85 0212 1 | KEY is the word that is to be identified; SIZE is its length.  
86 0213 1 | LIST is a list of keywords, as defined in the module LP1.  
87 0214 1 |  
88 0215 1 | IMPLICIT INPUTS: None  
89 0216 1 |  
90 0217 1 | IMPLICIT OUTPUTS: None  
91 0218 1 |  
92 0219 1 | ROUTINE VALUE:  
93 0220 1 | COMPLETION CODES:  
94 0221 1 |  
95 0222 1 | If KEY is recognized, the address of the corresponding  
96 0223 1 | entry in LIST is returned. Otherwise, zero is returned.  
97 0224 1 |  
98 0225 1 | SIDE EFFECTS: None  
99 0226 1 |--  
100 0227 1 |  
101 0228 2 | BEGIN  
102 0229 2 | MAP  
103 0230 2 | LIST : REF VECTOR;  
104 0231 2 |  
105 0232 2 | LOCAL  
106 0233 2 | RESULT,  
107 0234 2 | TOP,  
108 0235 2 | BOTTOM,  
109 0236 2 | HALF_OF RANGE,  
110 0237 2 | MIDPOINT;  
111 0238 2 |  
112 0239 2 | TOP = 0;  
113 0240 2 | BOTTOM = .LIST [-1] - 1;  
114 0241 2 |  
115 0242 2 | WHILE 1 DO  
116 0243 2 | BEGIN  
117 0244 3 | HALF_OF RANGE = (.BOTTOM - .TOP + 1)/2;  
118 0245 3 | MIDPOINT = .TOP + .HALF_OF RANGE;  
119 0246 3 | RESULT = TPROBE (.KEY, :SIZE, .LIST [.MIDPOINT]);  
120 0247 3 |  
121 0248 3 | CASE .RESULT FROM 0 TO 3 OF  
122 0249 3 | SET  
123 0250 3 |  
124 0251 3 | [FOUND] :  
125 0252 3 | RETURN .LIST [.MIDPOINT];  
126 0253 3 |  
127 0254 3 | [GIVE_UP] :  
128 0255 3 | RETURN 0;  
129 0256 3 |  
130 0257 3 | [TRY ABOVE] :  
131 0258 4 | BEGIN
```

```

132      0259  4
133      0260  4
134      0261  4
135      0262  4
136      0263  4
137      0264  4
138      0265  4
139      0266  3
140      0267  3
141      0268  3
142      0269  4
143      0270  4
144      0271  4
145      0272  4
146      0273  4
147      0274  4
148      0275  4
149      0276  4
150      0277  3
151      0278  3
152      0279  3
153      0280  3
154      0281  3
155      0282  1

        IF .MIDPOINT EQL .TOP
        THEN RETURN 0
        ELSE BOTTOM = .MIDPOINT - 1;
        END;

        [TRY BELOW] :
        BEGIN

        IF .MIDPOINT EQL .BOTTOM
        THEN RETURN 0
        ELSE TOP = .MIDPOINT + 1;
        END;

        TES;

        END
        END;

```

```

.TITLE FIND
.IDENT \V04-000\

.EXTRN TPROBE

.PSECT $CODE$,NOWRT,2

.ENTRY FIND, Save R2,R3,R4,R5,R6
CLRL TOP
MOVL LIST, R4
SUBL3 #1, -4(R4), BOTTOM
SUBL3 TOP, BOTTOM, R1
INCL R1
DIVL3 #2, R1, HALF OF RANGE
ADDL3 HALF OF RANGE, TOP, MIDPOINT
PUSHL (R4)[MIDPOINT]
MOVQ KEY, -(SP)
CALLS #3, TPROBE
CASEL RESULT, #0, #3
.WORD 6S-2S,-
      3S-2S,-
      4S-2S,-
      5S-2S
MOVL (R4)[MIDPOINT], R0
RET
CMPL MIDPOINT, TOP
BEQL 6S
MOVAC -1(R2), BOTTOM
BRB 1S
CMPL MIDPOINT, BOTTOM
BNEQ 7S

```

FIND
VO4-000

Module Level Declarations

H 6
16-Sep-1984 00:28:19
14-Sep-1984 13:06:16 VAX-11 Bliss-32 V4.0-742
DISK\$VMSMASTER:[RUNOFF.SRC]FIND.BLI;1 Page 6
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FLG:
VO4-

	50	D4	0004A	6\$:	CLRL	R0	
		04	0004C		RET		: 0273
55	01	A2	9E	0004D	7\$:	MOVAB	1(R2), TOP
		BA	11	00051		BRB	: 0275

: 0242

: Routine Size: 83 bytes. Routine Base: \$CODE\$ + 0000

: 156 0283 1
: 157 0284 1 END
: 158 0285 0 ELUDOM

: !End of module

PSECT SUMMARY

Name	Bytes	Attributes
\$CODE\$	83	NOVEC,NOWRT, RD , EXE,NOSHR, LCL, REL, CON,NOPIC,ALIGN(2)

Library Statistics

File	-----	Symbols	-----	Pages	Processing
	Total	Loaded	Percent	Mapped	Time
\$255\$DUA28:[SYSLIB]XPORT.L32;1	590	0	0	252	00:00.1
\$255\$DUA28:[RUNOFF.SRC]DSRLIB.L32;1	1248	4	0	86	00:00.3

COMMAND QUALIFIERS

: BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LISS:FIND/OBJ=OBJ\$:FIND MSRC\$:FIND/UPDATE=(ENH\$:FIND)

: Size: 83 code + 0 data bytes
: Run Time: 00:03.4
: Elapsed Time: 00:14.3
: Lines/CPU Min: 5104
: Lexemes/CPU-Min: 9438
: Memory Used: 43 pages
: Compilation Complete

0341 AH-BT13A-SE
VAX/VMS V4.0

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FIND
LIS

ENDWD
LIS

FIGURE
LIS

FLGSEM
LIS

FOOFIL
LIS

GOODE
LIS

FCIMRA
LIS

ENONLY
LIS

FUNFNU
LIS

FOOBOT
LIS

GBLDCL
LIS

ENDFLG
LIS

FOODUT
LIS

FORMAT
LIS